

What is claimed is:

1. A monitoring and tracking system comprising:
a portable, hand-held data collector comprising
a sensor,
a reader,
a user I/O device,
a data processor in electrical communication with the
sensor, the reader and the user I/O device,
a computer; and
a communications link in electrical communications with the
data processor of the hand-held data collector and the computer.
2. The monitoring and tracking system of claim 1 wherein the
reader is a bar code reader.
3. The monitoring and tracking system of claim 1 wherein the
sensor is a temperature sensor.
4. The monitoring and tracking system of claim 1 wherein the user
I/O device includes a pushbutton.
5. The monitoring and tracking system of claim 1 wherein the
user I/O device includes an alpha-numeric keypad.
6. The monitoring and tracking system of claim 1 wherein the
user I/O device includes a visual display.
7. The monitoring and tracking system of claim 1 wherein the user
I/O device includes an audio signal generator.

8. The monitoring and tracking system of claim 1 wherein the communications link comprises a first RF wireless transceiver in electrical communications with the data processor and a second RF wireless transceiver in electrical communications with the computer.
9. The monitoring and tracking system of claim 1 further comprising a printer in electrical communications with the data processor.
10. The monitoring and tracking system of claim 9 wherein the printer is a bar code label printer.
11. A hand-held data collector comprising;
 - a sensor,
 - a reader,
 - a user I/O device
 - a data processor in electrical communication with the sensor, the reader and the user I/O device, and
 - a transceiver unit in electrical communication with the data processor, the data processor receiving information from the sensor and the reader.
12. The monitoring and tracking system of claim 11 wherein the reader is a bar code reader.
13. The monitoring and tracking system of claim 11 wherein the sensor is a temperature sensor.
14. The monitoring and tracking system of claim 11 wherein the user I/O device includes pushbuttons.

15. The monitoring and tracking system of claim 11 wherein the user I/O device includes a visual display.

16. The monitoring and tracking system of claim 11 wherein the user I/O device includes an audio signal generator.

17. The monitoring and tracking system of claim 11 further comprising a printer in electrical communications with the data processor.

18. The monitoring and tracking system of claim 17 wherein the printer is a bar code label printer.

19. A method of monitoring and tracking temperatures of a food item comprising:

providing identity data identifying the food item;

measuring a temperature value of the food item with a temperature measuring device;

transmitting the temperature value of the food item to a computer; and

storing at the computer the temperature value of the food item in association with the identity data, so that a record of the temperature of the food item is maintained.

20. The method of monitoring and tracking temperatures of claim 19 wherein providing identity data further comprises:

reading with a hand-held data collector a label on the food item, the label having the identity data; and

transmitting the identity data to the computer.

21. The method of monitoring and tracking temperatures of claim 20 further comprising measuring the temperature value with a temperature measuring device in electrical communications with the hand-held data collector.

22. The method of monitoring and tracking temperatures of claim 21 further comprising transmitting the temperature value from the hand-held data collector to the computer.

23. The method of monitoring and tracking temperatures of claim 22 further comprising:

transmitting temperature related data for the food item from the computer to the hand-held data collector; and

printing a label for the food item using a printer in electrical communications with the hand-held data collector, the label containing information relating to the temperature related data.

24. The method of monitoring and tracking temperatures of claim 19 wherein providing identity data further comprises providing with the computer a tracking number identifying the food item.

25. The method of monitoring and tracking temperatures of claim 19 further comprising:

measuring the temperature value with a temperature measuring device in electrical communications with the computer; and

transmitting the temperature value from the temperature measuring device to the computer.

26. The method of monitoring and tracking temperatures of claim 25 further comprising transmitting an identity of the temperature measuring device to the computer.

27. The method of monitoring and tracking temperatures of claim 19 further comprising:

- measuring a plurality of temperature values of the food item at different times with the temperature measuring device;

- transmitting the plurality of temperature values of the food item to the computer; and

- storing at the computer the plurality of temperature values of the food item in association with the identity data, so that a time record of the plurality of temperature values of the food item over time is maintained.

28. The method of monitoring and tracking temperatures of claim 19 further comprising:

- detecting a nonconformance of the temperature value of the food item with respect to specified temperature values for the food item; and

- providing an alert signal in response to detecting the nonconformance of the temperature value.

29. A method of monitoring and tracking temperatures of a food item comprising:

- providing identity data identifying the food item;

- measuring a first temperature value representing a temperature of the food item at a first location;

- transmitting the first temperature value and an identity of the first location to a computer;

measuring a second temperature value representing a temperature of the food item at a second location;

transmitting the second temperature value and an identity of the second location to the computer; and

storing at the computer the first and second temperature values and identities of the respective first and second locations in association with the identity data, so that a record of the temperature of the food item at different locations is maintained.

30. A method of monitoring and tracking temperatures of a food item comprising:

providing identity data for the food item;

measuring a first temperature value representing a temperature of the food item;

transmitting the first temperature value to a computer;

measuring a second temperature value representing a temperature of the food item;

transmitting the second temperature value to a computer; and

storing at the computer the first and second temperature values in association with the identity data, so that a record of the temperature of the food item over time is maintained.

31. The method of monitoring and tracking temperatures of claim 30 further comprising measuring the first and the second temperature values at different times.

32. The method of monitoring and tracking temperatures of claim 31 further comprising measuring the first and the second temperature values at different times at one food processing station.

33. The method of monitoring and tracking temperatures of claim 31 further comprising measuring the first and the second temperature values at respective first and second food processing stations.

34. The method of monitoring and tracking temperatures of claim 31 further comprising:

detecting a nonconformance of each of the first and the second temperature values of the food item with respect to specified temperature values for the food item; and

providing an alert signal in response to detecting a nonconformance of one of the first and the second temperature values.

35. The method of monitoring and tracking temperatures of claim 31 further comprising:

measuring a plurality of first temperature values representing temperatures of the food item at a first food processing station;

transmitting the plurality of first temperature values to a computer;

measuring a plurality of second temperature values representing temperatures of the food item at a second food processing station;

transmitting the plurality of second temperature values to a computer; and

storing at the computer the plurality of the first and second temperature values in association with the identity data, so that over time a record of the temperature of the food item is maintained.

36. A method of monitoring and tracking shelf life for a food item comprising:

providing identity data identifying a food item;
identifying a first location of the food item; and
automatically determining a shelf life for the food item as a
function of the identity of the first location.

37. The method of monitoring and tracking shelf life of claim 36
further comprising:

identifying another location to which the food item is moved;
and

automatically determining and storing a new shelf life for the
food item as a function of the first and other locations.

38. The method of monitoring and tracking shelf life of claim 36
further comprising updating a table providing shelf-life values as a
function of different food items and locations.

39. The method of monitoring and tracking shelf life of claim 38
further comprising automatically determining a first date on which the
food item is placed at the first location.

40. The method of monitoring and tracking shelf life of claim 39
further comprising automatically generating an expiration date for a
food item as a function of a shelf-life value and the first date.

41. A method of monitoring and tracking expiration dates for a
food item comprising:

providing identity data identifying a food item;
identifying a first location of the food item;
determining a first date on which the food item is placed at the
first location; and

automatically determining a first expiration date for the food item as a function of the identity of the first location and the first date.

42. The method of monitoring and tracking shelf life of claim 41 further comprising:

- identifying a second location to which the food item is moved;
- determining a second date on which the food item is placed at the second location; and

- automatically determining a new expiration date for the food item as a function of the first and second locations and the first and second dates.

43. The method of monitoring and tracking expiration dates of claim 42 further comprising iterating steps in the process of claim 42 each time the food item is moved.

44. The method of monitoring and tracking expiration dates of claim 41 further comprising automatically providing an alert in response to the new expiration date exceeding a maximum expiration date for the food item.

45. A method of monitoring and tracking expiration dates for food items comprising:

- (a) receiving and storing identity data identifying food items;
- (b) determining and storing a first date on which each of the food items is placed at a first location;
- (c) automatically determining and storing a first expiration date for each of the food items as a function of the first location and the first date;

(d) receiving and storing data identifying a second location to which one of the food items is moved;

(e) determining and storing a second date on which the one of the food items is placed at the second location; and

(f) automatically determining and storing a new expiration date for the one of the food items as a function of the data identifying the first and second locations and the first and second dates.

46. The method of monitoring and tracking expiration dates of claim 45 further comprising iterating steps (e) and (f) each time one of the food items is moved to a new location.

47. The method of monitoring and tracking expiration dates of claim 45 further comprising automatically providing an alert in response to the new expiration date exceeding a maximum expiration date for the one of the plurality of food items.

48. The method of monitoring and tracking expiration dates of claim 45 further comprising:

automatically reviewing expiration dates for all of the food items having first identity data in response for a request to use a food item having the first identity data;

automatically identifying a food item having an oldest expiration date; and

automatically providing an output identifying a location of the food item having the oldest expiration date.

49. The method of monitoring and tracking expiration dates of claim 48 further comprising:

receiving input data corresponding to the food item having the oldest expiration date; and

automatically providing an output signal in response to receiving the input data corresponding to the food item having the oldest expiration date.

50. A method of monitoring and tracking a food lot number for a food item comprising:

providing and storing in a monitoring and tracking system identity data identifying food items and food lot numbers associated with respective ones of the food items, each food lot number identifying a specific lot from which the food item was made by a particular manufacturer; and

generating a report using the monitoring and tracking system to identify the food items associated with a lot number input by a user.

51. The method of monitoring and tracking a food lot number of claim 50 further comprising:

providing and storing a plurality of location codes representing respective locations at which each of the food items has been located in food handling and preparation processes; and

automatically generating a report using the monitoring and tracking system to identify locations of the food items associated with a lot number input by a user.

52. The method of monitoring and tracking a food lot number of claim 50 further comprising:

providing and storing prepared food codes representing foods prepared using the food items; and

automatically generating a report using the monitoring and tracking system to identify prepared foods using food items associated with a lot number input by a user.